DULBECCO'S MODIFIED EAGLE'S MEDIUM (DME)
With 4500 mg/L Glucose and L-Glutamine,
Without Sodium Phosphate and Sodium Bicarbonate

Product Number **D3656**
Storage Temperature 2-8°C

Product Description
Many modifications of Eagle's Medium have been developed since the original formulation appeared in the literature. Among the most widely used of these modifications is Dulbecco's Modified Eagle's Medium (DME). DME is a modification of Basal Medium Eagle (BME) that contains a higher concentration of amino acids and vitamins, as well as additional supplementary components. The original DME formula contains 1000 mg/L of glucose and was first reported for culturing embryonic mouse cells. A further alteration with 4500 mg/L glucose has proven to be optimal in cultivating certain cell types.

DULBECCO'S MODIFIED EAGLE'S MEDIUM (DME), Catalog No. D3656, With 4500 mg/L Glucose and L-Glutamine, Without Sodium Phosphate and Sodium Bicarbonate is one of the cell culture media available from Sigma. The selection of a nutrient medium is strongly influenced by 1] type of cell, 2] type of culture [monolayer, suspension, clonal] and 3] degree of chemical definition necessary. It is important to review the literature for recommendations concerning medium, supplementation and physiological parameters required for a specific cell line.

Components	g/L
Calcium Chloride (anhydrous)	0.2
Ferric Nitrate•9H_2O	0.0001
Magnesium Sulfate (anhydrous)	0.09767
Potassium Chloride	0.4
Sodium Chloride	6.4
L-Arginine•HCl	0.084
L-Cystine•2HCl	0.0626
L-Glutamine	0.584
Glycine	0.030
L-Histidine•HCl• H_2O	0.042
L-Isoleucine	0.105
L-Leucine	0.105
L-Lysine•HCl	0.146
L-Methionine	0.030
L-Phenylalanine	0.066
L-Serine	0.042
L-Threonine	0.095
L-Tryptophan	0.016
L-Tyrosine•2Na•2 H_2O	0.10379
L-Valine	0.094
Choline Chloride	0.004
Folic Acid	0.004
myo-Inositol	0.0072
Niacinamide	0.004
D-Pantothenic Acid (hemicalcium)	0.004
Pyridoxal•HCl	0.004
Riboflavin	0.0004
Thiamine•HCl	0.004
D-Glucose	4.5
Phenol Red•Na	0.0159

DME normally contains the indicated concentration of the following component:

Sodium Phosphate Monobasic (anhydrous)	0.109 g/L

Precautions and Disclaimer
REAGENT
For R&D use only. Not for drug household or other uses.

Preparation Instructions
Powdered media are extremely hygroscopic and should be protected from atmospheric moisture. The entire contents of each package should be used immediately after opening. Preparing a concentrated solution of medium is not recommended as precipitates may form.

Supplements can be added prior to filtration or introduced aseptically to sterile medium. The nature of the supplement may affect storage conditions and shelf life of the medium.

1. Measure out 90% of final required volume of water. Water temperature should be 15-20°C.
2. While gently stirring the water, add the powdered medium. Stir until dissolved. Do NOT heat.
3. Rinse original package with a small amount of water to remove all traces of powder. Add to solution in step 2.
4. To the solution in step 3, add 3.7 g sodium bicarbonate or 49.3 ml of sodium bicarbonate solution [7.5%w/v] for each liter of final volume of medium being prepared. Stir until dissolved.
5. While stirring, adjust the pH of the medium to 0.1-0.3 pH units below the desired pH since it may rise during filtration. The use of 1N HCl or 1N NaOH is recommended.
6. Add additional water to bring the solution to final volume.
7. Sterilize immediately by filtration using a membrane with a porosity of 0.22 microns.
8. Aseptically dispense medium into sterile container.

Storage/Stability
Store the dry powdered medium at 2-8°C under dry conditions and liquid medium at 2-8°C in the dark. Deterioration of the powdered medium may be recognized by any or all of the following: [1] color change, [2] granulation/clumping, [3] insolubility. Deterioration of the liquid medium may be recognized by any or all of the following: [1] pH change, [2] precipitate or particulate matter throughout the solution, [3] cloudy appearance [4] color change. The nature of supplements added may affect storage conditions and shelf life of the medium. Product label bears expiration date.

Procedure

MATERIALS REQUIRED BUT NOT PROVIDED

Water for tissue culture use [W3500]
Sodium Bicarbonate [S5761] or
Sodium Bicarbonate Solution, 7.5% [S8761]
1N Hydrochloric Acid [H9892]
1N Sodium Hydroxide [S2770]
Medium additives as required

References

1. Dulbecco, R. and Freeman, G.(1959). Plaque Production by the Polyoma Virus. Virology. 8, 396-397.
2. Smith,J.D., Freeman,G., Vogt,M. and Dulbecco, R.(1960) The Nucleic Acid of Polyoma Virus. Virology. 12, 185-196.
3. Morton, H..J., (1970).A Survey of Commercially Available Tissue Culture Media.In Vitro. 6, 89-108.
4. Rutzky, L.P. and Pumper, R.W., (1974). Supplement to a Survey of Commercially Available Tissue Culture Media(1970). In Vitro. 9, 468-469.

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